

# Science Update

## An Electric Sense of Fiber Quality

ARS and Zellweger Uster, Inc., of Knoxville, Tennessee, will test whether a new electrical sensor can measure cotton fiber moisture during quality checks. ARS researchers originally developed the sensor for cotton ginning. However, by measuring and adjusting for moisture levels, the sensor can help predict strength and other fiber qualities. This would reduce cost and time for classifying cotton's market value. ARS and the company are validating the system for eventual commercialization under a cooperative research and development agreement (CRADA). W. Stanley Anthony, USDA-ARS U.S. Cotton Ginning Laboratory, Stoneville, Mississippi, phone (601) 686-3094.

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*Calosoma sycophanta* beetle feeding on a gypsy moth caterpillar. (K4187-10)

## Starter Crop of Caterpillar Hunters Might Slow Gypsy Moth Advance

One *Calosoma sycophanta* beetle—a.k.a. the “caterpillar hunter”—can eat as many as 150 gypsy moth caterpillars. Unfortunately, *Calosoma*'s natural spread lags behind the moths'. The caterpillars attack forest and shade trees in the

region from New England west to Michigan and south to North Carolina. In a 1994 field test, scientists released about 100 *Calosoma* beetles at each of five forested plots in Delaware, Michigan, and West Virginia. The beetles reproduced at each plot. This suggests that releasing them near leading edges of the moth's spread—in states such as Indiana, Maine, Michigan, North Carolina, and Ohio—might efficiently get them established. They would multiply and consume many more gypsy moth caterpillars, helping reduce tree damage. Moth and beetle alike are native to Europe. About 1-1/2 inches long, *C. sycophanta* is one of about a dozen gypsy moth natural enemies established in this country after being imported, tested, and released by USDA. Scientists cooperating in the test are with ARS, the Connecticut Agricultural Experiment Station, Michigan State University, West Virginia University, and USDA's Animal and Plant Health Inspection Service. More beetles were released in West Virginia last spring. Work in Connecticut focuses on developing a lab diet for mass-rearing them. Roger Fuester, USDA-ARS Beneficial Insects Introduction Research Laboratory, Newark, Delaware, phone (302) 731-7330.

## Telltale Address for Mastitis?

A site on chromosome 23 may help reveal whether a particular Holstein cow is genetically prone to developing mastitis. This bacterial infection costs U.S. dairy farmers more than \$2 billion annually in treatment and lost milk. Further studies may pinpoint which DNA is

linked with low mastitis vulnerability. If so, prospective breeding animals could be screened for this trait. In the ARS study, researchers analyzed DNA of “grandsires” from seven Holstein families. They noted any genetic difference at three sites on each of the bulls' chromosomes. At one site on chromosome 23, the genetic lineup differed, depending on the bull—or, rather, on the bulls' daughters. Cows born to one set of bulls contained many more somatic cells—a sign of a greater rate of mastitis—than cows sired by others. One particular DNA variation at the site appears especially linked to lower somatic cell scores. Researchers will check the DNA predictors by analyzing a Maryland Holstein herd. Melissa S. Ashwell, USDA-ARS Beltsville (Maryland) Agricultural Research Center, phone (301) 504-8543.

## For Every Corn Plant, a Genetic Pedigree

Pioneer Hi-Bred International in Johnson, Iowa, is teaming with ARS to find genetic markers for “fingerprinting” corn and other crops. Under a CRADA, researchers will focus on markers called simple sequence repeats (SSR's)—patterns unique to an individual plant. The goal is to isolate and screen SSR's in specific plant cultivars. Ultimately, this could let breeders know the exact genetic background of any plant in a breeding program. Germplasm curators could also use SSR fingerprints in cataloguing their accessions. Currently, curators often can't determine the precise genetic makeup of each cultivar. Stephen Kresovich, USDA-ARS Plant Genetic Resources Conservation Unit, Griffin, Georgia, phone (404) 228-7254.